

ABSTRACT

1 A mechanism for maintaining the first-in first-out order of commands in a
2 multiple-input and multiple-output buffer structure includes a command number
3 generator for generating and assigning a command number to each command entering the
4 buffer structure, and a command number comparator for comparing the command
5 number of the outgoing command at each buffer in the buffer structure to determine
6 which command should exit. Both command number generator and command comparator
7 have a cyclic counter that has a period greater than or equal to the total number of
8 allowable buffer entries in the buffer structure. For maintaining order of posted and non-
9 posted command queues, a pending posted write counter is used in the posted command
10 queue to record the number of pending posted write command and each entry in the non-
11 posted command queue is associated with a dependency counter.